



PATENT  
Docket No. JCLA7632  
page 1

**UNITED STATE PATENT AND TRADEMARK OFFICE**

In re application of :  
Application No. : 10/013,981  
Filed : December 10,2001  
For : METHOD OF IDENTIFYING  
INFRARED TRANSMISSION HEAD  
FUNCTION  
Examiner : LI, SHI K.  
Art Unit : 2633

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December 5, 2005

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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**EX PARTE HAN et al.**

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**Application for Patent**

**Filed December 10, 2001**

**Serial No. 10/013,981**

**FOR:**

**METHOD OF IDENTIFYING INFRARED TRANSMISSION  
HEAD FUNCTION**

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**APPEAL BRIEF**

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Jiawei Huang

## TABLE OF CONTENTS

	<u>Page No.</u>
I. Real party in interest .....	1
II. Related appeals and interferences .....	1
III. Status of the claims .....	1
IV. Status of amendments .....	1
V. Summary of claimed subject matter .....	1
VI. Grounds of rejection to be reviewed on appeal .....	2
Were claims 1-3 and 6-12 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan?	
Were claims 4 and 13 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of Weber?	
Were claims 5 and 14 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of AAPA?	
VII. ARGUMENTS.....	3
A. The related law.....	
B. Grouping of the claims.....	
C. Claims 1-3 and 6-12 were improperly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan.....	
D. Claims 4 and 13 were improperly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of Weber.....	
E. Claims 5 and 14 were improperly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of AAPA. ....	
H. Conclusion. ....	
VIII. Claims appendix.....	143

I. Real party in interest

The real party in interest is VIA Technologies, Inc., the assignee of record.

II. Related appeals and interferences

There are no related appeals and/or interferences.

III. Status of the claims

A total of 14 claims were presented during prosecution of this application. Applicant appeals rejected claims 1-14.

IV. STATUS OF AMENDMENTS

In the Final Office Action dated June 15, 2005, the copy of amended claims was entered. Applicants filed a response to the Final Office Action without further amendments.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention provides a transmission method capable of identifying infrared transmission head functions and effectively utilizing loop circuit testing to determine the brand name and transmission mode of the infrared transmission head so that the need for producing additional infrared controller is eliminated.

The present invention further provides a transmission method capable of identifying infrared transmission head function through the utilization of two groups of direct access memory devices that comprised in an infrared controller. One group of direct access memory devices holds transmission test data while the other group of direct access memory devices holds reception test data so that transmission and reception are supported at the same time.

The present invention further provides a transmission method capable of efficiently identifying infrared transmission head function over the prior art in which a conventional infrared controller uses a half-duplex mode for transmission. That is, data reception and data transmission can not occur concurrently, which results in an inefficient identification of the infrared transmission head function. In the present invention, as the infrared controller includes two groups of direct access memory devices, the concurrently receiving and transmitting data is enabled and thus the infrared controller has full duplex capacity. The infrared controller supports data transmission and reception simultaneously so that the type of infrared transmission head and corresponding transmission mode are determined automatically. Furthermore, because the transmission and reception of data as well as the setting of brand name and transmission mode of the infrared transmission head is achieved through the same leads of a South Bridge control chipset, leads can be reduced and therefore production cost is also reduced.

## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Were claims 1-3 and 6-12 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan?

Were claims 4 and 13 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of Weber?

Were claims 5 and 14 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of AAPA?

## VII. Arguments

### A. The related law

A prima facie case of obviousness requires that the reference teachings “appear to have suggested the claimed subject matter.” *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143, 147 (CCPA 1976). To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

When more than one references or sources of prior art are required in establishing the obviousness rejection, “it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.” *In re Lalu*, 747 F.2d 703, 223 USPQ 1257, 1258 (Fed. Cir. 1984). There must be some motivations to combine the references; these motivations must come from “the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

Finally, if an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending thereon is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d, 1596 (Fed. Cir. 1988). In other words, no matter whether dependent claims are conventional, they should not be rendered obvious as long as their corresponding base claims are nonobvious for the reason that they contain all limitations thereof.

### B. Grouping of the claims

For the ground of rejection contested by appellant in this appeal, claims 1-5 may be treated as one group to stand or fall together and claims 6-14 may be treated as one group to stand or fall together. Independent claims 1 and 6 may be taken as representatives for the issue on appeal.

*C. Were claims 1-3 and 6-12 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan?*

1. The rejection

Claims 1-3 and 6-12 were rejected under 35 U.S.C. 103(a) as being obvious over Verzulli (U.S. Patent No. 6,426,820 B1; hereinafter “Verzulli”) in view of Kamon (U.S. Patent No. 5,726,645; hereinafter “Kamon”) or Chiloyan (U.S. Patent No. 6,008,735; hereinafter “Chiloyan”). In rendering the final rejection decision, the Examiner alleged that Verzulli discloses in Fig.1 a self-test arrangement for a remote control; Kamon discloses predetermined operation setting associated with manufacturers is stored in memory and retrieved by microprocessor for setting the transmitter and that Chiloyan, like Kamon, teaches in Figs. 3A-3M to try various brand names for finding the correct setting of a remote control unit. As a result, Claims 1-3 and 6-12 are obvious over either the combination of Verzulli and Kamon or the combination of Verzulli and Chiloyan

2. The prior art

Verzulli discloses a remote controller that includes a loop-back, self-test capability, which indicates the operability of the remote controller without additional testing apparatus. Furthermore, from col., 1, lines 37-55, there evidently discloses the problem to be solved; that is, it would be advantageous if users could determine which component (the remote controller or the television) is malfunctioning so that the correct component could be serviced.

Although Kamon also discloses a remote controller, the problem to be solved by Kamon is that when users need to make preset selection setting on the remote controller, they found difficulties to be pushed quickly without referring to an attached manufacturer correspondence table or the like.

Chiloyan discloses method and system for programming a remote control unit. From col.2, lines 16-21, there discloses the problem to be solved by Chiloyan; that is, there exists a need for an automated set-up process for the remote control unit without the need for the users to refer to an instruction manual. Moreover, the problem to be solved by Chiloyan is similar to that to be solved by Kamon.

3. The prior art references' failure to suggest the desirability of the claimed invention

From the last sentence in the paragraph [0002] in the specification of the present invention, there discloses the problem to be solved is "due to difficulties in identifying the brand name of an infrared transmission head just by their external appearance, a wrong infrared transmission head may couple with an infrared controller and increase installation difficulty." Therefore, the object of the present invention provides a transmission method capable of identifying infrared transmission head functions so that the need for producing additional infrared controller is eliminated.

Furthermore, there must be some motivations to combine the references; these motivations must come from "the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir.1998). Accordingly, to cause any one skilled in the art to which the present invention pertains to make either the combination of Verzulli and Kamon or the combination of Verzulli and Chiloyan, the first requirement is that problems intended to be solved by each prior art reference should be explicitly or implicitly not only addressed and identical each other, but identical to that of the present invention as well.



However, from aforementioned discussion, the problem to be solved by Verzulli, a self-test of whether a remote controller is operable, is not the same as be solved by Kamon, a method for making preset selection setting on the remote controller without referring to an attached manufacturer correspondence table. Likewise, as the problem to be solved by Chiloyan is similar as solved by Kamon, the problems to be solved by Verzulli and Chiloyan are not identical. Moreover, any one of Verzulli, Kamon and Chiloyan does fail to explicitly or implicitly address the same problem as solved by the present invention, i.e. how to identify an infrared transmission functions.

Verzulli teaches how to determine which component (the remote controller or the television) is malfunctioning. Fig. 3 of Verzulli shows the steps of a self test of a remote control. After comparing the content of IR self test signal and self test code in step 46, The results of the comparison are indicated as a passed or failed status provided to the audio/visual status indicator in steps 48 and 52, respectively, and the self-test mode is terminated in step 50. Col. 4, lines 22-27. Clearly, Verzulli's invention is about testing a remote control, he is totally silent about identifying infrared transmission head functions.

Accordingly, there is no desirability or motive to modify Verzulli with Kamon or Chiloyan by using a setting associated with a brand name for setting the transmitter as proposed in the Office Action.

#### 4. Even if combined Verzulli and Kamon or combined Verzulli and Chiloyan

Even if the combination of Verzulli and Kamon or the combination of Verzulli and Chiloyan could be made, either combinations still fails to teach, suggest or disclose "identifying infrared transmission head functions through an infrared controller coupled to an infrared transmission head," as claimed in the independent claims 1 and 6. Moreover, the proposed combinations still fail to teach, suggest or disclose "registering said test brand

name and associated test transmission mode of said infrared transmission head when said transmission test data and said received test data are identical; wherein said infrared controller's sending out transmission test data and said infrared controller's receiving test data occur concurrently," as claimed in the independent claims 1 and 6.

The Office Action asserted that, in Verzulli's method, the transmission of test data and receiving of test data occur concurrently. Applicant respectfully disagrees. In Verzulli, microcontroller 14 outputs a self test signal to IR LED 18 (through amplifier 16), the IR LED 18 then transmits an IR self test signal to photo-diode 20. After receiving the IR self test signal, the photo-diode 20 outputs an electronic version of the IR signal to a second amplifier 22, which digitizes the IR signal and outputs it to the microcontroller 14. Col. 3, lines 15-30. From Verzulli's teaching, it is clear that the transmission of test data to the transmitter (IR LED 18) and receiving of test data from the transmitter are conducted sequentially. While in the present invention as defined in claims 1 and 6, the infrared controller sends out a transmission test data to the infrared transmission head and receives a reception test data from the infrared transmission head simultaneously. Two groups of direct access memory devices 510 and 520 are provided in the infrared controller 100 of the present invention for simultaneous data transmission and data reception. Kamon and Chiloyan also fail to teach or suggest the above features of the present invention. Accordingly, neither the combination of Verzulli and Kamon nor the combination of Verzulli and Chiloyan, can render the independent claims 1 and 6 obvious.

As set forth in the preceding section "*In re Rouffet*, 149 F.3d 1350," if an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending thereon is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d, 1596 (Fed. Cir. 1988). Namely, no matter whether dependent claims are conventional, they should not be rendered obvious as long as their corresponding base claims are nonobvious for the reason that they contain all

limitations thereof. Accordingly, dependent claims 2-3 and 7-12 are nonobvious over the combination of Verzulli and Kamon or the combination of Verzulli and Chiloyan.

*D. Were claims 4 and 13 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of Weber (U.S. Patent 6,185,620B1; hereinafter "Weber")?*

1. The rejection

The difference between Verzulli, Kamon and Chiloyan and the claimed invention is that Verzulli, Kamon and Chiloyan do not teach two groups of memory. Weber teaches in Fig.9A arrangement of system memory for a transmitter/receiver unit.

2. The prior art

Verzulli discloses a remote controller that includes a loop-back, self-test capability, which indicates the operability of the remote controller without additional testing apparatus. Furthermore, from col., 1, lines 37-55, there evidently discloses the problem to be solved; that is, it would be advantageous if users could determine which component (the remote controller or the television) is malfunctioning so that the correct component could be serviced.

Although Kamon also discloses a remote controller, the problem to be solved by Kamon is that when users need to make preset selection setting on the remote controller, they found difficulties to be pushed quickly without referring to an attached manufacturer correspondence table or the like.

Chiloyan discloses method and system for programming a remote control unit. From col.2, lines 16-21, there discloses the problem to be solved by Chiloyan; that is, there exists a need for an automated set-up process for the remote control unit without the need for

the users to refer to an instruction manual. Moreover, the problem to be solved by Chiloyan is similar to that to be solved by Kamon.

The problem to be solved and object of Weber are to provide an improved method and apparatus for transferring data from one data protocol to another data protocol. Evidently, the problem to be solved by Weber is different not only from that of any one of Verzulli, Kamon and Chiloyan, but from the present invention as well.

3. The prior art references' failure to suggest the desirability of the claimed invention

From the description set forth in preceding section "*In re Rouffet*, 149 F.3d 1350," to cause any one skilled in the art to which the present invention pertains to make either the combination of Verzulli, Kamon (or Chiloyan) and Weber, the first requirement is that problems intended to be solved by each prior art reference should be explicitly or implicitly not only addressed and identical each other, but identical to that of the present invention as well.

However, the problem to be solved by Verzulli, a self-test of whether a remote controller is operable, is not identical to that to be solved by Kamon, a method for making preset selection setting on the remote controller without referring to an attached manufacturer correspondence table. Likewise, as the problem to be solved by Chiloyan is similar to that to be solved by Kamon, the problems to be solved by Verzulli and Chiloyan are not identical. Moreover, any one of Verzulli, Kamon and Chiloyan does fail to explicitly or implicitly address the problem to be solved by the present invention, i.e. how to identify an infrared transmission functions. Besides, the problem to be solved by Weber is different not only from that of any one of Verzulli, Kamon (or Chiloyan), but from the present invention as well.

Accordingly, there is no desirability (or a motive) disclosed in any one of Verzulli, Kamon (or Chiloyan) and Weber, for any one skilled in the art to which the invention pertains to make their combination because this combination does not benefit him/her.

4. Even if combined Verzulli, Kamon (or Chiloyan) and Weber

Even if Verzulli, Kamon(or Chiloyan) and Weber could be combined, the claims 4 and 13 can not be rendered obvious because they are dependent claims and their corresponding base independent claims 1 and 6 are nonobvious so as not to render any claim depending thereon obvious, as set forth in the preceding section “A. The related law.”

*E. Were claims 5 and 14 properly rejected under 35 U.S.C. 103(a) as being obvious over Verzulli in view of Kamon or Chiloyan, and further in view of AAPA?*

2. The rejection

The difference between Verzulli, Kamon (or Chiloyan) and the claimed invention is that Verzulli, Kamon (or Chiloyan) do not teach the infrared controller is enclosed within a South Bridge control chipset. However, Fig.1 (prior art) of the present invention teaches that the infrared controller 100 is enclosed within a South Bridge control chipset 400.

2. The prior art

Verzulli discloses a remote controller that includes a loop-back, self-test capability, which indicates the operability of the remote controller without additional testing apparatus. Furthermore, from col., 1, lines 37-55, there evidently discloses the problem to be solved; that is, it would be advantageous if users could determine which component (the remote controller or the television) is malfunctioning so that the correct component could be serviced.

Although Kamon also discloses a remote controller, the problem to be solved by Kamon is that when users need to make preset selection setting on the remote controller, they

found difficulties to be pushed quickly without referring to an attached manufacturer correspondence table or the like.

Chiloyan discloses method and system for programming a remote control unit. From col.2, lines 16-21, there discloses the problem to be solved by Chiloyan; that is, there exists a need for an automated set-up process for the remote control unit without the need for the users to refer to an instruction manual. Moreover, the problem to be solved by Chiloyan is similar to that to be solved by Kamon.

### 3. The prior art references' failure to suggest the desirability of the claimed invention

From the last sentence in the paragraph [0002] in the specification of the present invention, there discloses the problem to be solved is “due to difficulties in identifying the brand name of an infrared transmission head just by their external appearance, a wrong infrared transmission head may couple with an infrared controller and increase installation difficulty.” Therefore, the object of the present invention is provides a transmission method capable of identifying infrared transmission head functions so that the need for producing additional infrared controller is eliminated.

From the description set forth in preceding section “*In re Rouffet*, 149 F.3d 1350,” to cause any one skilled in the art to which the present invention pertains to make the combination of Verzulli, Kamon (or Chiloyan) and AAPA, the first requirement is that problems intended to be solved by each prior art reference should be explicitly or implicitly not only addressed and identical each other, but identical to that of the present invention as well.

However, from aforementioned discussion, the problem to be solved by Verzulli, a self-test of whether a remote controller is operable, is not identical to that to be solved by

Kamon, a method for making preset selection setting on the remote controller without referring to an attached manufacturer correspondence table. Likewise, as the problem to be solved by Chiloyan is similar to that to be solved by Kamon, the problems to be solved by Verzulli and Chiloyan are not identical. Moreover, any one of Verzulli, Kamon and Chiloyan does fail to explicitly or implicitly address the problem to be solved by the present invention, i.e. how to identify an infrared transmission functions.

Accordingly, there is no desirability (or a motive) disclosed in any one of Verzulli, Kamon (or Chiloyan) and AAPA, for any one skilled in the art to which the invention pertains to make their combination because this combination does not benefit him/her.

#### 4. Even if combined Verzulli, Kamon (or Chiloyan) and AAPA

Even if Verzulli, Kamon (or Chiloyan) and AAPA could be combined, the claims 5 and 14 can not be rendered obvious because they are dependent claims and their corresponding base independent claims 1 and 6 are nonobvious so as not to render any claim depending thereon obvious, as set forth in the preceding section “A. The related law,”

#### F. Conclusion

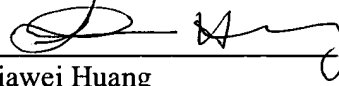
As noted, none of the prior art references, either alone or in combination, can be said to render the appealed claims obvious. That is, none of the prior art references (i.e. Verzulli, Kamon, Chiloyan and Weber) fails to teach, suggest or disclose “method for identifying infrared transmission head functions, “as disclosed in the present invention and the claims thereof.

Accordingly, Applicant believes that the rejections under 35 U.S.C. §103 are in error, and respectfully requests the Board of Patent Appeals and Interferences to reverse the Examiner's rejections of the claims on appeal.

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## VIII. Claims appendix

**CLAIMS ON APPEAL:**

1.(previously amended) A transmission method for identifying infrared transmission head functions through an infrared controller coupled to an infrared transmission head, said method comprising the following steps:

setting said infrared controller in a test circuit mode;

selecting a test brand name and its corresponding test transmission mode of the infrared transmission head among a plurality of brand names;

executing an operation of programming said infrared controller according to the test transmission mode corresponding to the test brand name of said infrared transmission head;

said infrared controller's sending out transmission test data corresponding to the test brand name to the infrared transmission head;

said infrared controller's receiving test data according to the test transmission mode corresponding to the test brand name of said infrared transmission head;

registering said test brand name and associated test transmission mode of said infrared transmission head when said transmission test data and said received test data are identical; and

operating said infrared transmission head according to the registered test brand name and test transmission mode of said infrared transmission head;

wherein said infrared controller's sending out transmission test data and said infrared controller's receiving test data occur concurrently.

2. (previously amended) The transmission method of claim 1, wherein said method further includes repeating steps of selecting a test brand name, executing an

operation of programming said infrared controller, said infrared controller's sending out transmission test data, said infrared controller's receiving test data, and registering said test brand name when said transmission test data and said received test data are identical until all said brand names have been selected as a test brand name.

3. (previously amended) The transmission method of claim 1, wherein said infrared transmission controller supports data transmission and reception simultaneously.
- 4.(original) The transmission method of claim 1, wherein said infrared controller further includes a direct access memory unit partitioned into two separate groups, one group is used for holding transmission test data while said other group is used for holding received test data.
5. (original) The transmission method of claim 1, wherein said infrared controller is enclosed within a South Bridge control chipset such that said South Bridge control chipset provides a few leads to serve as terminals of said infrared controller for data transmission and reception.
6. (previously amended) A transmission method for identifying infrared transmission head functions, comprising said steps of:
  - coupling an infrared controller to an infrared transmission head;
  - programming said infrared controller and executing said infrared controller's sending out transmission test data to the infrared transmission head;
  - said infrared controller's receiving reception test data from the infrared transmission head ; and
  - registering said a brand name and its corresponding test transmission mode of said infrared transmission head when said transmission test data and said reception test data is identical;

wherein said infrared controller's sending out transmission test data and said infrared controller's receiving test data occur concurrently.

7. (previously amended) The transmission method of claim 6, wherein said infrared controller supports data transmission and reception simultaneously.
8. (original) The transmission method of claim 6, said infrared controller works under a test circuit mode.
9. (previously amended) The transmission method of claim 6, wherein said step of said infrared controller's sending out transmission test data is based on said test transmission mode corresponding to the test brand name of said infrared transmission head.
10. (previously amended) The transmission method of claim 6, wherein said step of said infrared controller's receiving reception test data is based on said test transmission mode corresponding to the test brand name of said infrared transmission head.
11. (previously amended) The transmission method of claim 6, wherein said method further includes selecting test brand name and its corresponding transmission mode among a plurality of brand names.
12. (previously amended) The transmission method of claim 11, wherein said method further includes repeating said steps of selecting a test brand name, said infrared controller's sending out transmission test data, said infrared controller's receiving test data, and registering said test brand name when said transmission test data and said received test data are identical until all said brand names have been selected to serve as a test brand name.
13. (original) The transmission method of claim 6, wherein said infrared controller further includes a direct access memory unit partitioned into two separate groups,

one group is used for holding transmission test data while said other group is used for holding received test data.

14. (original) The transmission method of claim 6, wherein said infrared controller is enclosed within a South Bridge control chipset such that said South Bridge control chipset provides a few leads to serve as terminals of said infrared controller for data transmission and reception.